Network Centric Warfare Discussion
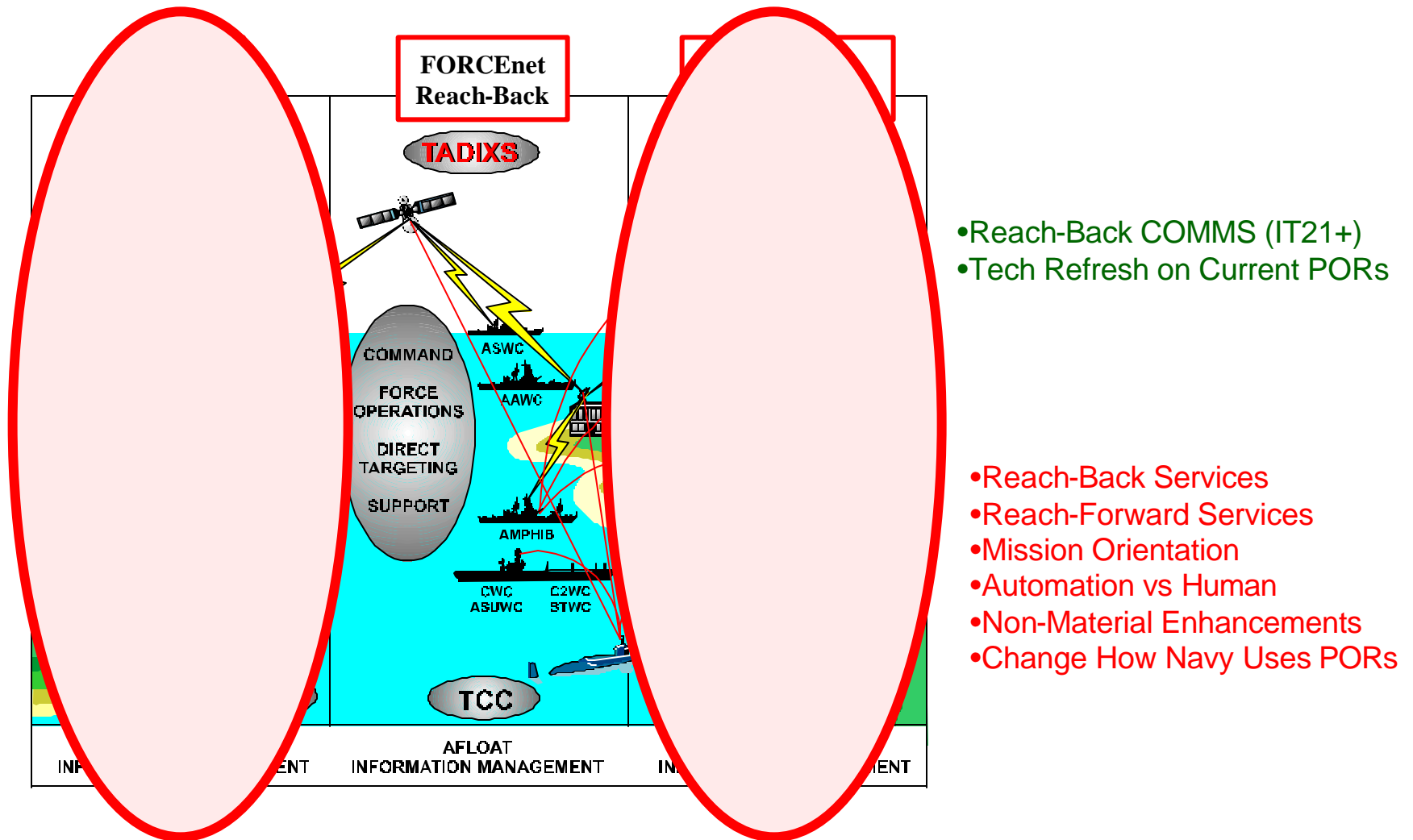# C2 Working Group

29 June 2005

Brian Clingerman
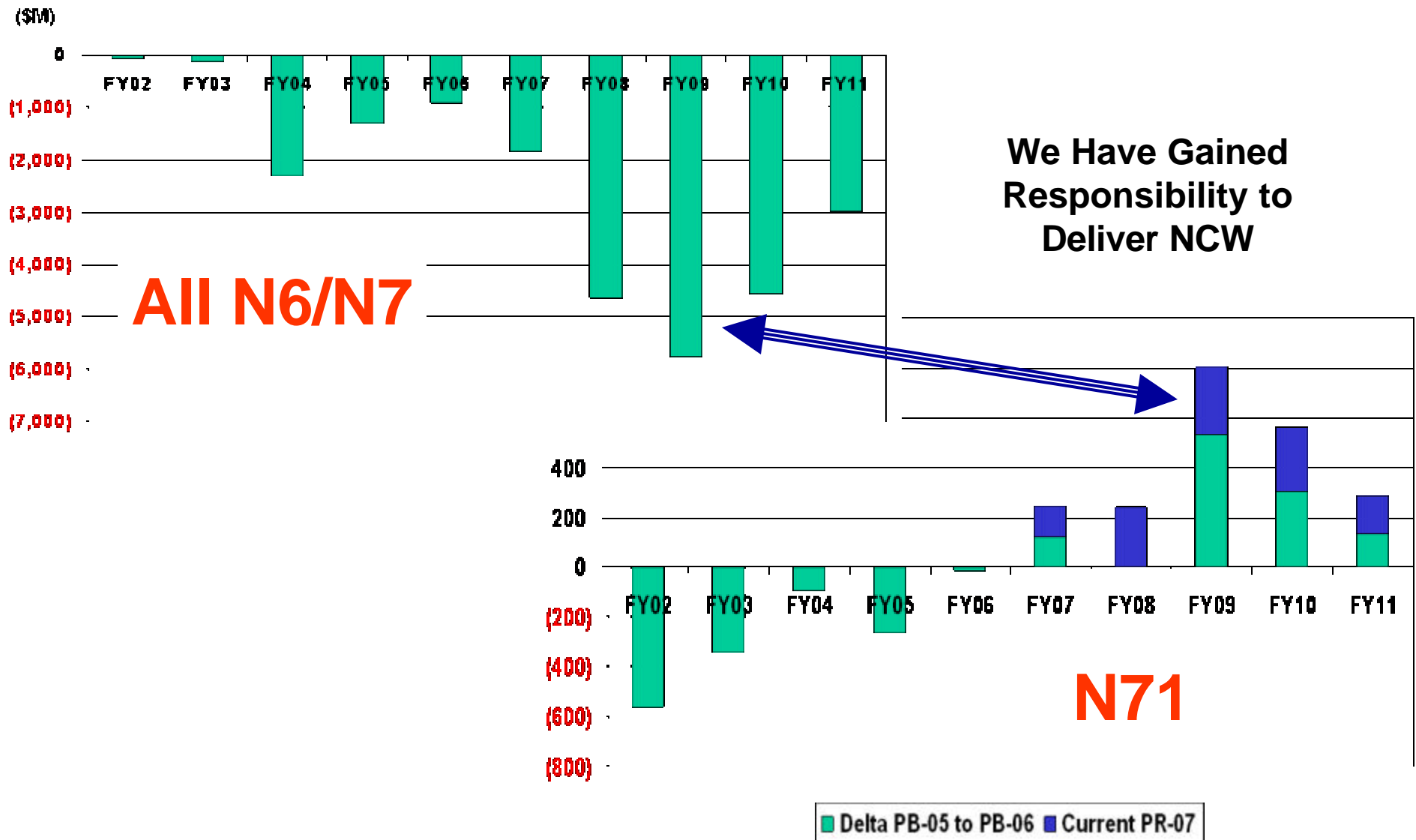**OPNAV 71T**

~~Copernicus~~ Architecture
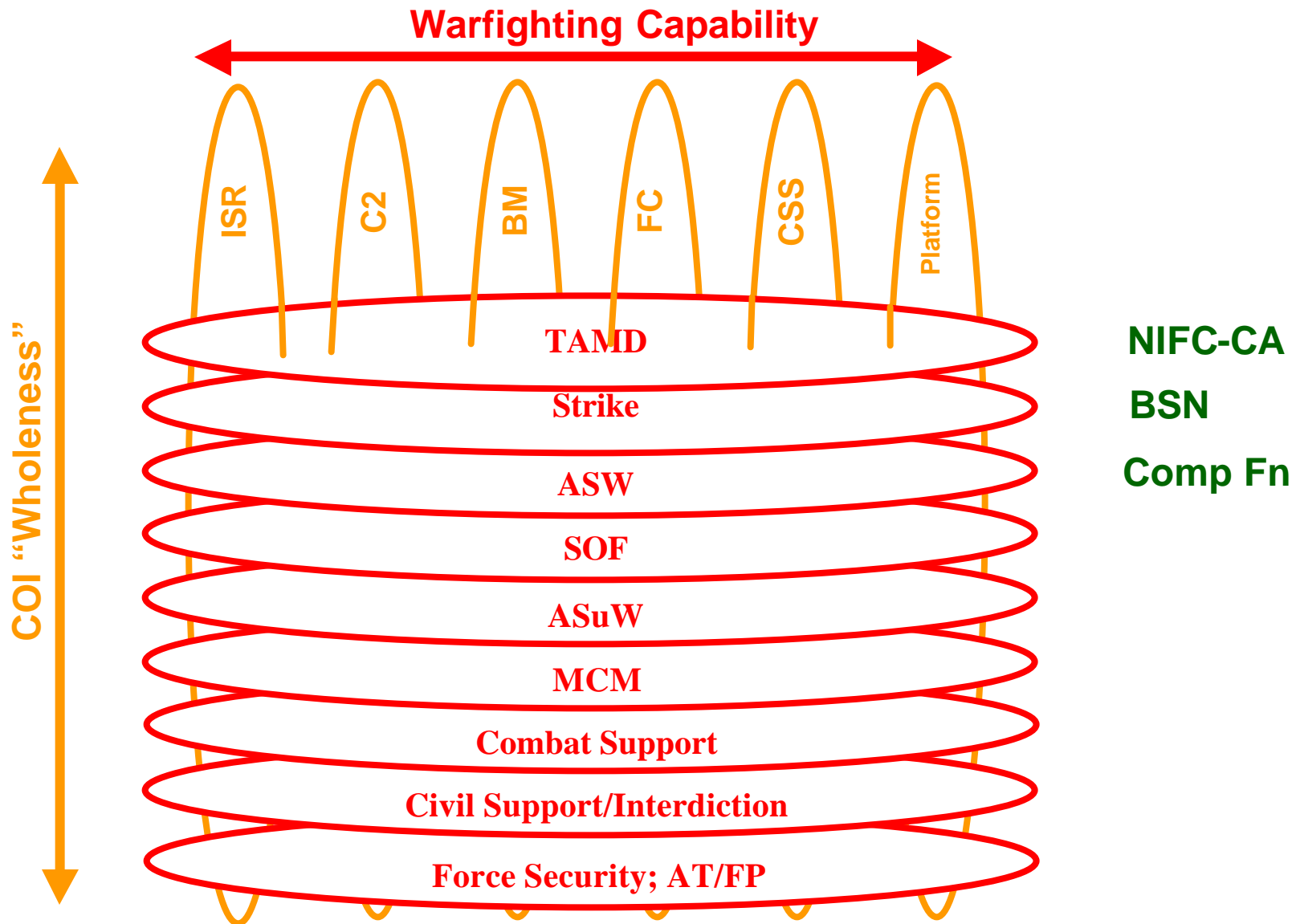## FORCEnet

FORCEnet Reach-Back

TADIXS

COMMAND

FORCE OPERATIONS

DIRECT TARGETING

SUPPORT

ASWC

AAWC

AMPHIB

CWC
ASUWC

C2WC
BTWC

TCC

AFLOAT INFORMATION MANAGEMENT

INFORMATION MANAGEMENT

INFORMATION MANAGEMENT

- Reach-Back COMMS (IT21+)
- Tech Refresh on Current PORs

- Reach-Back Services
- Reach-Forward Services
- Mission Orientation
- Automation vs Human
- Non-Material Enhancements
- Change How Navy Uses PORs

A Technical and Implementation Strategy

N6/N7 Trends
(N71 Trends)

All N6/N7

We Have Gained Responsibility to Deliver NCW

N71

Legend: ■ Delta PB-05 to PB-06 ■ Current PR-07

Integration Observations

Warfighting Capability

ISR   C2   BM   FC   CSS   Platform

COI "Wholeness"

- TAMD
- Strike
- ASW
- SOF
- ASuW
- MCM
- Combat Support
- Civil Support/Interdiction
- Force Security; AT/FP

NIFC-CA

BSN

Comp Fn

FORCEnet Forward-Reach
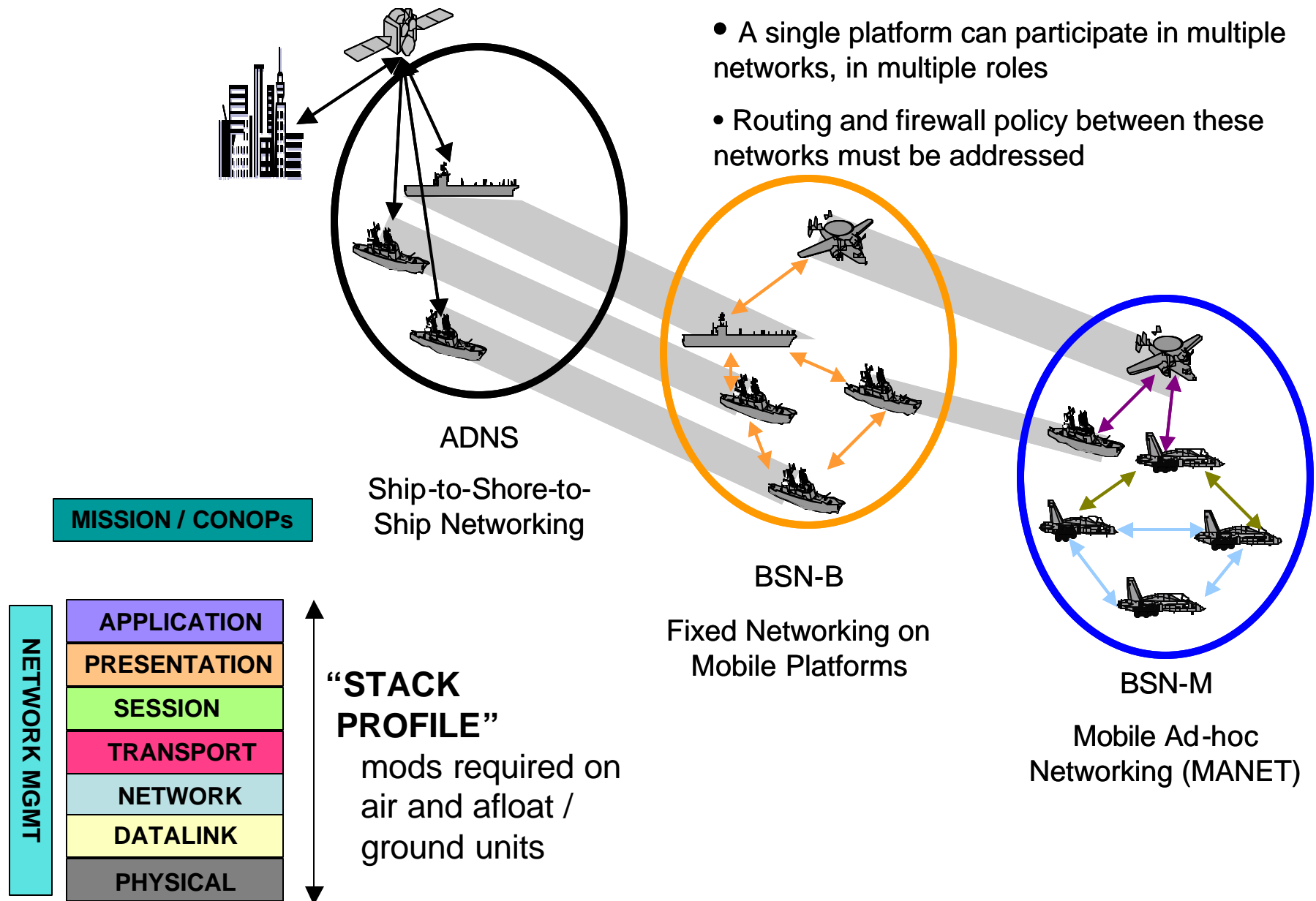
- A single platform can participate in multiple networks, in multiple roles

- Routing and firewall policy between these networks must be addressed

ADNS

Ship-to-Shore-to-Ship Networking

BSN-B

Fixed Networking on Mobile Platforms

BSN-M

Mobile Ad-hoc Networking (MANET)

MISSION / CONOPs

NETWORK MGMT

| APPLICATION |
| PRESENTATION |
| SESSION |
| TRANSPORT |
| NETWORK |
| DATALINK |
| PHYSICAL |

"STACK PROFILE" mods required on air and afloat / ground units

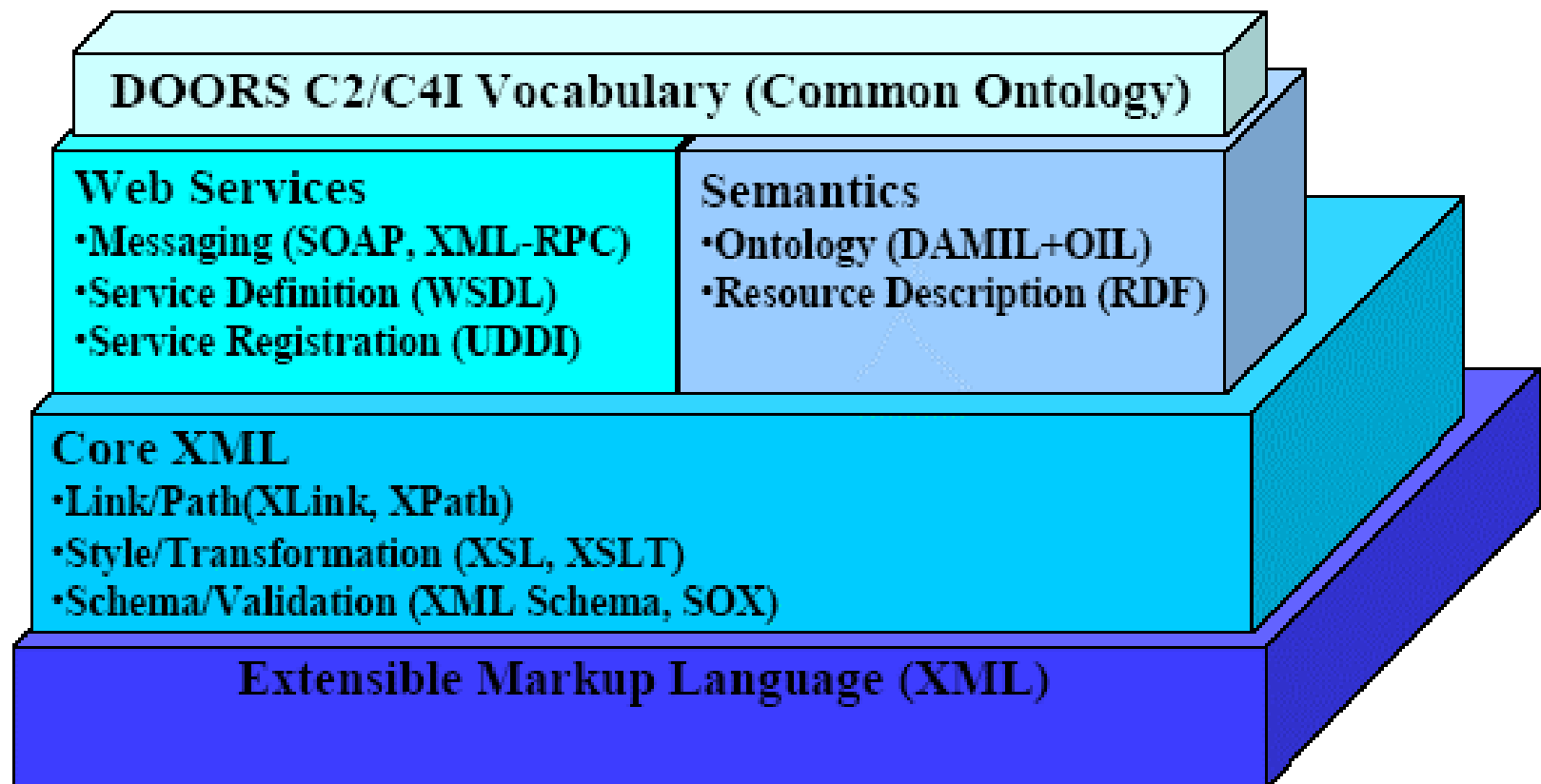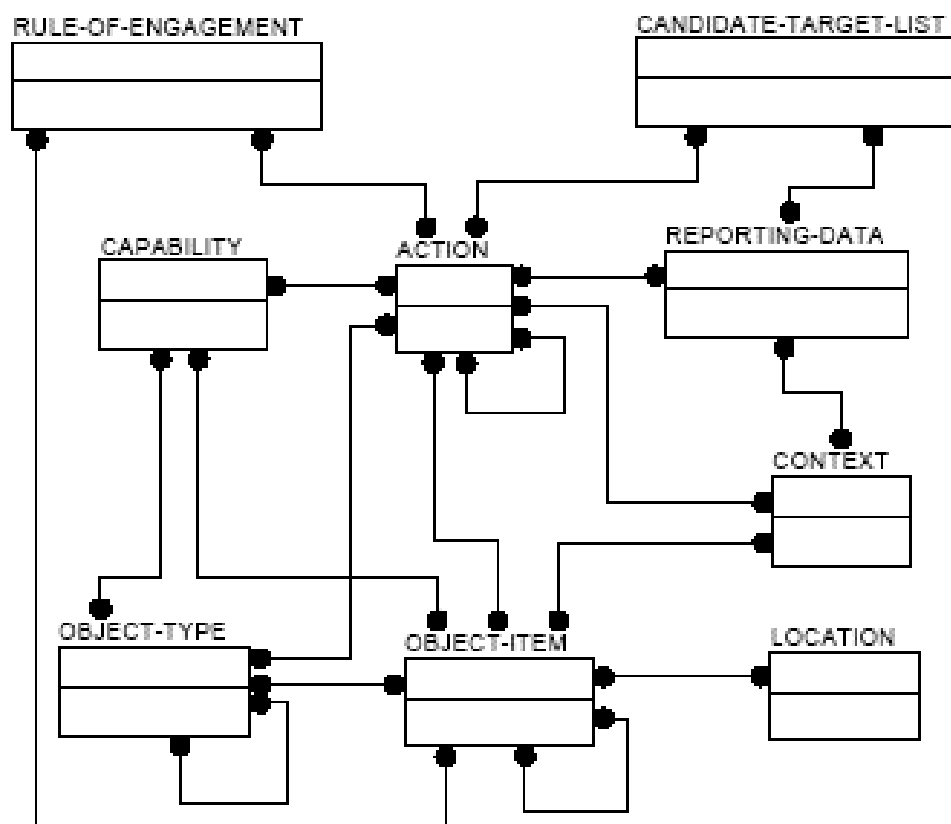# FORCEnet needs a common vocabulary

Figure 4 -
"Use of XML Technologies/Specifications in DOORS"

JC3IEDM Origins – Objective of the Multilateral Interoperability Programme (MIP)

- To define the *minimum* operational and technical requirements to be included within system specification which will allow national C2 systems to interoperate by the automatic exchange of data i.e. Level 5 of System Interconnection

UNCLASSIFIED

MIP Member Nations and Customers   IDA

	FULL MEMBERS	
CA	LFCS	
DA	DACCIS	
FR	SICF, SIR	
GE	HEROS-2/1	
IT	SIACCON	
NO	NACCIS/NORCCIS	
NL	ISIS	
SP	SIMACET	
UK	ATacCS/ComBAT	
US	MCS	

	ASSOCIATE MEMBERS	
AS	JCCS, BCSS	
BE	SICBEL	
CZ	GF-TCCS	
PL	KOLORADO	
PO	SICCE	
TU	TKKBS	
HU		
AFNORTH		
SHAPE		

OTHERS

NDAG   NCDM

NC3A   IDE

ES-23Apr93 7   UNCLASSIFIED

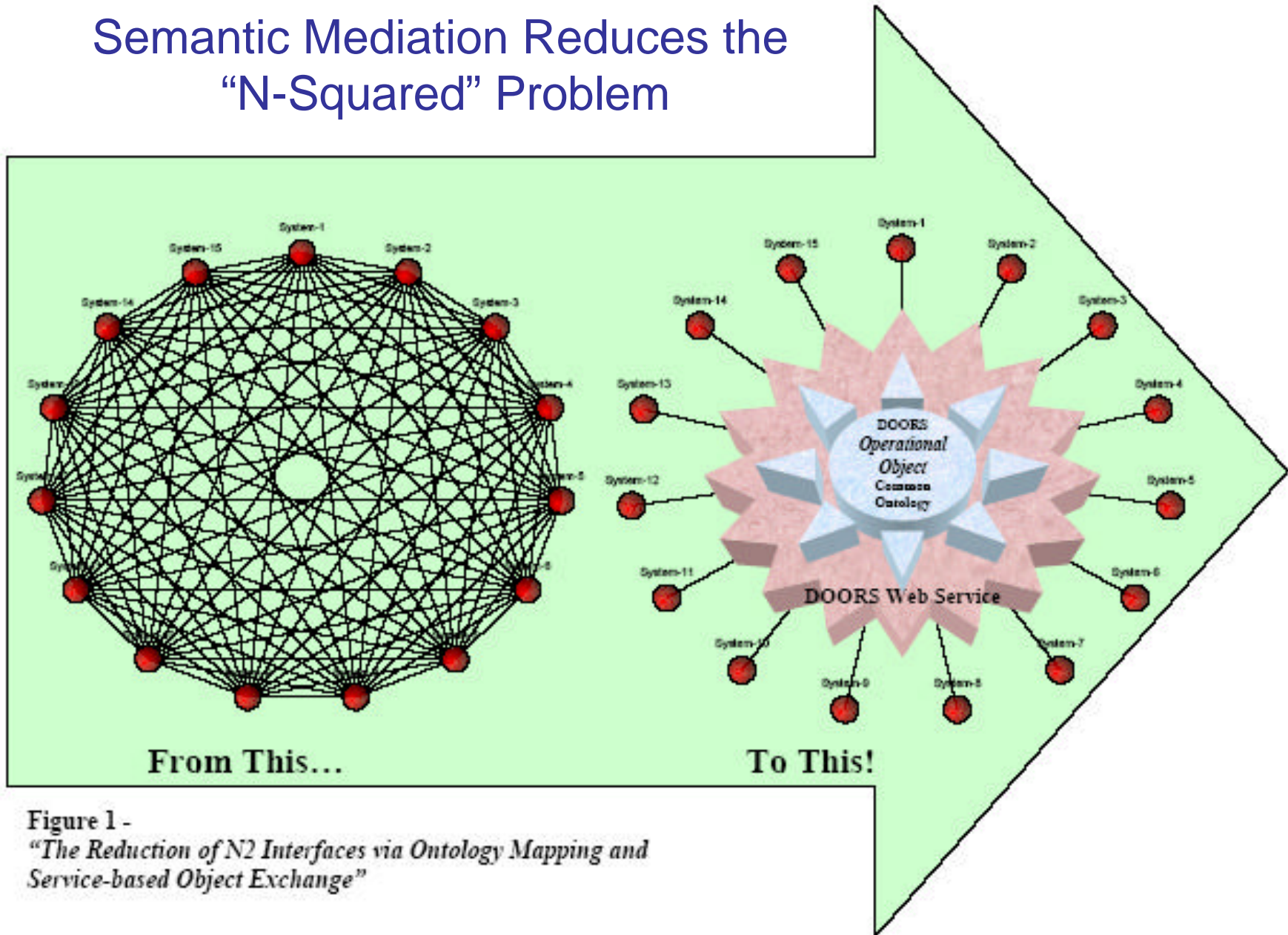# Semantic Mediation Reduces the "N-Squared" Problem

Figure 1 -
"The Reduction of N2 Interfaces via Ontology Mapping and Service-based Object Exchange"

Priorities

- ## What is the revolution in doctrine? (Non-Material)
- ## Where Does the Navy Buy-Back Manning Reductions? (Automation or Process Improvements)
- ## Material Solutions – the whole stack
  - Computer Network Defense
  - FORCEnet Forward-Reach
  - Exposing Knowledge